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ABSTRACT

This paper reviews the various matching model (aptitude-treatment-interaction) strategies that might be used in human relations training (HRT) settings. The introduction provides a definition of matching models, discusses the need for a matching model approach in HRT, identifies certain assumptions about HRT, and provides an overview of the rest of the paper. Each of the five types of matching models is reviewed. The utility of each model in the HRT setting is discussed, and specific examples of HRT applications of the models are provided. The history of matching model research is briefly reviewed, including the best approach for HRT, i.e., the capitalization model which calls for a training design that capitalizes on the participants' strong points. (Author)

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Types of Matching Models in Human Relations Training

Abstract

This paper reviews the various matching model (aptitude-treatment-interaction) strategies that might be used in human realtions training (HRT) settings. The introduction provides a definition of matching models, discusses the need for a matching model approach in HRT, identifies certain assumptions about HRT, and provides an overview of the rest of the paper. Next, each of the five types of matching models are reviewed. The utility of each model in the HRT setting is discussed, and specific examples of HRT applications of the models are provided. This paper then briefly reviews the history of matching model research. Of all the matching model strategies reviewed, the best approach for HRT seems to be the capitalization model. This model calls for a training design that capitalizes on the participants' strong points.

Introduction

What Is A Matching Model?

People differ in an infinite number of ways. People also differ in their responses to certain kinds of environments (e.g., therapeutic, educational, or HRT treatments). For example, a particular HRT treatment may be very effective for some persons and ineffectual (or even counterproductive) for others. A matching model approach involves systematically matching different types of persons to different types of environments. The goal of this process is to facilitate the greatest possible achievement of outcomes for each group of persons.

A matching model is also known as an aptitude-treatment-interaction (ATI) model. An ATI (or matching model) approach to research investigates the interactions that occur between persons' aptitudes and various instructional treatments. An ATI is said to exist when there is evidence of differential effects.

Lewin (1935) expressed the matching model notion with his formula, $B=f(P,E)$. The behavior (B) is a function of the person (P) and the environment (E). The outcomes from HRT (behaviors) are a function of the interaction between the participants (persons) and the training treatment (environment). The greatest gains from training, according to Lewin, would result from treatments that are well-matched to participants. Conversely, when participants are

mis-matched to the training treatment we would expect minimal (or possibly negative) outcomes.

The Need For A Matching Model Approach in Human Relations Training

One of the problems with human relations training (HRT) is that goals, processes, and participants are typically identified in aggregated, global terms. Figure 1 illustrates this characterization of the training process. The designers of training programs aggregate clients (a) without paying attention to whether they are likely to profit from the training (1). The training process (b) is considered to be a "black box", as training activities, at least in terms of their relationship to the effects produced, are often grouped together. Outcomes (c) are listed as a conglomeration of goals without regard to priority, and they typically have no direct causal links to the training process (b).

An application of matching models to the HRT setting would help discover which persons are most sucessful at achieving what goals via which processes. The linking of specific outcomes to specific persons through certain

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(1) This is not to preclude intuitive or implicit matching or screening. Both can, and probably do, occur. The author's point here is that the training is not usually designed to take differential effects into account. Trainers are not to be blamed for this oversight: Most trainers don't have the research skills, financial resources, client populations, or organizational support to undertake matching model research projects.

Insert Figure 1 Here

training procedures seems to be a useful path to improving the efficacy of training treatments. Furthermore, the prioritizing of outcomes may suggest one treatment procedure over another for a given group of persons.

It has been apparent from the early developmental stages of HRT that "a good deal of overlap exists between education, human relations training, counseling, psychotherapy, and social work..."(Miles, 1960,p.301). There is a wide variety of possible outcomes from training (Smith, 1975; Mezoff, 1979a) and many training goals are also sought in educational and therapeutic settings.

Relatively little HRT research has been based on a matching model approach: that is, very few HRT studies (Heck, 1971) have included in the research design the possibility of the differential effects of training treatments on various subpopulations. This paper surveys the matching model literature from the fields of education and psychotherapy and attempts to extrapolate from those findings to HRT applications.

Assumptions About Human Relations Training

Certain assumptions should be made explicit before the various types of matching models are reviewed. Human relations training is considered to be a field that draws

from both education and psychotherapy. As such, it may be possible to make some inferences about outcomes from training based on studies of adult learning and based on psychotherapeutic research. Education has typically emphasized cognitive goals, whereas psychotherapy (for normals) has emphasized primarily affective outcomes (see Figure 2). Human relations training (depending on the orientation of the particular program) has stressed each of the various types of outcomes (cognitive, affective, & mixed) at various times. A cognitive approach is included in Mezoff's (1979b) training program, a mixed approach (skill training & self-behavior-modification) is taken by Ivey (1968,1971), whereas an affective focus is common to many personal-growth-oriented workshops (Lieberman, Yalom, & Miles, 1973).

Insert Figure 2 About Here

Figure 2 illustrates the three assumptions made in this paper: 1) HRT bridges the fields of education and psychotherapy, 2) all three fields involve cognitive, affective , and mixed cognitive-affective components, and 3) the relative emphasis of each of these components varies across each of the three fields. However, Figure 2 does not

illustrate the wide variety of approaches and varying emphases among different HRT programs (or among different educational and therapeutic treatments) (2).

Definition of Terms

In the studies cited here, the appropriate subject groups are identified as either students, HRT participants, or psychotherapy clients. However, in the general discussion of matching models that follows (where there is not a specific study referred to) this paper treats the terms: "student", "participant", and "client" as interchangeable. In the general discussion the reader may also interchange the terms: "teacher", "facilitator", and "therapist". There are real differences among these terms, yet we shall use them interchangeably because for the purposes of our general review we are mainly concerned with the similarities among the fields of education, psychotherapy, and human relations training.

Overview

This paper will survey the five types of matching models that exist: (1)the instruction can be designed to fill specific gaps in the student's knowledge (remediation model), (2) the instruction can compensate for something that the student has difficulty doing for himself-herself,

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(2) The continuum of Figure 2 suggests a further advantage to the approach taken here. We are not just extrapolating from one field to a neighboring one. We are interpolating from the two fields at the ends of the continuum to the HRT settings that bridge them. Given that the assumptions about Figure 2 are correct, one would predict greater power and accuracy from the interpolation process than from mere extrapolation.

such as organize the material (compensation model), (3) the instruction can be tailored so that it builds on the strengths of the learner (capitalization model), (4) the instruction can be designed to meet the student's expressed preferences and interests (preferential model), or (5) the teacher and student can be matched for compatibility on certain personality, demographic, or values traits (compatible trait model).

These models are not necessarily mutually exclusive, and they can occasionally be complementary. Furthermore, the compatible trait model is not an ATI (aptitude-treatment-interaction) model in the strictest sense. Rather, it is a trait-trait-interaction (TTI) model. The TTI model involves, for instance, matching between a therapist's personality traits and the client's personality traits, whereas the ATI model considers the therapist's treatment and the client's personality traits (or aptitudes). It may be difficult, however, to distinguish between a therapist's traits and the treatment that the therapist provides. For the purposes of our discussion the TTI model will be subsumed by the ATI heading (DiVesta, 1973).

The remediation and compensatory models usually are designed to achieve short term objectives. The goals of the capitalization, preferential, and compatible trait models could be both long and/or short term. This paper discusses the various types of models and comments on their probable

utility to the designer of training treatments.

Remediation Model

The remediation model is designed to overcome learning deficiencies of slow or disadvantaged learners. The assumption made is "...[that] some critical ingredient of knowledge is deficient or missing, and no progress in learning can be expected unless the deficiency is overcome"(Salomon,1972, p.329). Therefore, remedial instruction is required. This model is the basis for many mastery learning approaches (Block, 1971). Salomon identifies five characteristics that are necessary for the application of a remediation model:

1.Highly task-specific measures of achievement are used.

2. Task-specific abilities account for a large portion of the variance in the learning outcome.

3. The learning is hierarchical and sequential in nature.

4. All subordinate objectives are teachable, and can be learned thru specific aptitudes (rather than general aptitudes).

5. General psychological states (e.g., anxiety) play a minor role in differentiating the high and low learners (1972, p. 330-332).

In most training situations the above requirements are usually not met. In human relations training they are

hardly ever met. Therefore, it seems that the remediation model, if strictly applied, would not be a likely candidate to explore the interactions betweer client characteristics and HRT treatments.

If we accept a more general (less stringent) interpretation of the remediation model, then we could find HRT applications for such a strategy. For example, it is necessary to teach participants basic skills (such as listening) before they can become proficient in more complex ones (such as counseling or mediation between disputing parties).

Compensation Model

The compensation model does not attempt to provide the student with remedial instruction. Instead, the student's deficiencies are side-stepped. The treatments "compensate for each learner's deficiency by providing the mode of presentation that the learner cannot provide for himself" (Snow, 1970, p. 76). For example, giving students an outline of a lecturer's notes can compensate for students' inability to take notes in an orderly fashion.

A treatment under a compensation model functions like a prosthetic device (Hunt, 1974) or an artificial aptitude. This model makes the following assumptions:

1. The student need not master all relevant capabilities.

2. Some abilities are not easy modified.

3. One can neutralize and circumvent a particular deficiency of a specific aptitude and still achieve the curriculum objectives.

4. The objectives can be achieved by reliance on more general aptitudes rather than on task-specific aptitudes.

Certain HRT goals are amenable to treatment via the compensation model. In general, cognitive goals (especially lower order ones) can be facilitated for certain personality types (e.g., field-dependent or low conceptual level) by providing a highly structured instructional treatment. The structured treatment does for the low Conceptual Level (CL) learners what they are least able to do for themselves. Hunt (1974) has observed that the compensation model "is especially appropriate when the behavior sought is information processing" (p. 125). When we strive for affective goals or higher order cognitive goals it is more difficult to implement a compensation model. For example, there are limitations as to how far you can structure a lesson to achieve the goal of "learning how to learn" or enhanced self-esteem. The more complex, abstract, and intangible the goal, the less useful the compensation model will be.

Consider the following hypothetical example of the compensation model applied to HR training settings: Suppose we found (through our search for aptitude-treatment-interactions) that low CL participants were gaining the least from an unstructured HRT program.

The conceptual systems matching model (Hunt, 1971) predicts that low CL subjects will profit more from a structured approach, and will profit the least from the unstructured flexible approach. Based on the findings from education, psychotherapy, and social work (Hunt, 1971), the compensation model would suggest that we attempt to sidestep the low CL participant's inability to operate in a low structured HRT program (e.g., a program with a large T-group component). For low CLs there could be a specially designed structured approach using exclusively experiential exercises (Mezoff, 1979b) or interpersonal skill training (Ivey, 1968). By providing low CL participants with a high degree of structure we would circumvent their inability to learn effectively from the T-group experience.

Capitalization Model

The capitalization model "exploits available strong points in the student's characteristics "(Solomon, 1972, p. 334). One can attempt to achieve goals by capitalizing on the student's existing strengths. This is in marked contrast to the remediation and compensation models, both of which deal primarily with deficiencies. This approach is based on the following premises:

1. The requirements of the treatments are matched to one of the learner's higher aptitudes (Snow, 1979).

2. The learners use the information processing strategies with which they perform best.

3. The strategies or "mediating processes" are consistent over a variety of tasks.

Capitalization and compensation are complementary processes. It is a matter of strategic choice whether we build on strengths or compensate for weaknesses. The two models could even be used in conjunction with each other. They influence learning outcomes in different fashions. If compensation were strong enough we might find an ATI that would be the opposite to the one generated by a capitalization model.

HRT can be designed to build on client strengths. Even Hunt's ATI investigations of conceptual level (CL), which at first appear to be compensatory in nature, can be understood as an application of the capitalization strategy. CL can be considered an accessibility channel (Hunt, 1971, p. 42) which provides an entry point for the change agent to attempt to "unfreeze" and change the client's behavior.

Matching for CL or cognitive style (e.g., field-dependence-independence) can be considered a form of both the compensatory and the capitalization models. Matching could be compensatory in that it makes up for the person's weakness (not being able to function effectively in ambiguous circumstances), while matching could also be capitalizing on the accessibility channel that the individual has (in responding favorably to highly structured learning situations). These models are obviously not mutually exclusive. Where there are strengths (or

accessibility channels) to draw on, it would seem profitable to take advantage of them to maximize HRT outcomes.

Consider the following hypothetical example of the capitalization model: Educational research on Field-Dependence-Independence suggests that the Field-Dependent person prefers a spectator approach, whereas the Field-Independent person prefers an active participant approach and exhibits hypothesis testing behavior (Witkin, Moore, Goodenough, & Cox, 1977). Suppose these findings were supported by HRT research. The fishbowl type of HRT activity (where one group sits outside another group and observes its process) might be well suited to allowing both Field-Dependent (FD) persons and Field-Independent (FI) persons the role that capitalized on their cognitive style. FD participants could be observers and FIs could be active participants. There are drawbacks, of course, to limiting the range of roles and experiences that people accrue through their training. However, the work of Bandura (1969) supports the principle of vicarious learning (learning through observation) and a study by Farson (1972) found that "purely vicarious exposure to videotapings of actual encounter groups was itself capable of inducing significant behavior change" (Silver & Coyne, 1977, p. 84). In the hypothetical example provided above it might be highly effective to prescribe for participants those roles that capitalize on their natural strengths.

Preferential Model

Preferences are student's explicitly expressed choices for instructional treatments. The preferential model also includes student's expressed interests (as interests often have implications for instructional treatment). In educational research, matching for student's preferences has been tested in a few studies. Cronbach and Snow summarize these findings and have found that matching for preferences does not increase student learning. In fact, such matching may be detrimental. "The evidence discourages the romantic view that self-selection of the instructional diet pays off" (1977, p. 478).

This author has made an extensive review of the literature dealing with psychotherapy outcomes. There were virtually no studies of psychotherapy outcomes where clients were given a choice among various treatments and/or counselors. The relationship of client preference to theraputic outcome remains to be explored. For this reason and due to the difficulty of obtaining reliable and valid outcome measures in psychotherapy, preferences in psychotherapy will not be discussed here.

Human relations training (especially the T-group) often represents a novel surrounding for the neophyte HRT participant. This unfamiliar cultural milieu frequently generates at least a moderate amount of dissonance for many persons. It would be unusual, indeed, for such

uncomfortable circumstances to elicit strong preferences for more of the same. It is not likely that preferential models will facilitate optimal outcomes for the tenderfoot trainee. A more sophisticated and experienced participant may be able to select preferred training options that best serve his/her needs. However, this hypothesis remains to be demonstrated.

An example of the preferential model applied to HRT would simply be giving clients a choice of a range of HRT training programs. The programs might vary in their degree of structure (high vs. low) or in their theme or focus (e.g., communication skills training, assertiveness training, transactional analysis, stages of group growth, etc.) Hopefully client preference would contribute to greater client satisfaction and learning. However, the findings from educational settings (Cronbach & Snow) are not encouraging in this regard.

Compatible Trait Model

Matching for compatiblity between teacher and student to achieve satisfaction and/or performance has had some support in the literature (Berzins, 1977; Hunt,1971). Three major types of compatibility matches exist. The first type of match, called the similarity match, achieves optimal results by having the interacting participants (e.g., teacher and student or therapist and client) share a common trait or characteristic (Berzins,1977; Dougherty, 1976; Keith-Spiegal & Spiegal, 1967; Levinson & Kitchener, 1966;

Palmer, 1973) .

Another match achieves the most positive results when the teacher is similar, but not too similar, to the student. In other words, there exists a similarity, but some tension or dissonance is also present. It has been hypothesized that moderate tension is productive and facilitative for the student. Presumably the similarity is helpful in having the student identify with the teacher. The similarity probably contributes to more effective interpersonal communication due to the shared trait (be it cultural background, construct dimensions, values, etc.). The dissimilarity may be necessary to provide the confrontation or dis-confirmation useful in facilitating client change.

The third type of personality matching entails a compatiblity due to the fulfillment of reciprocal needs (e.g., dominance and submission). Some theories of reciprocal needs (Carson, 1969) indicate that a prolonged complementary reciprocation should be avoided. Carson's rationale was that such a match would "confirm the patient's rigid or constricted self-concept and little therapeutic change [would occur]" (Berzins, 1977, p. 225).

The similarity match seems to achieve optimal results with background variables such as age, sex, race or ethnicity, maritial status, socioeconomic status, or social class (Fuller, 1963; Howard, Orlinsky, & Hill, 1970) . Similarity of cognitive styles and construct dimensions also has been found to enhance learning and therapeutic outcomes

(Carr, 1970; Edwards & Edgerly, 1970; Mendelsohn & Geller, 1963; McLachlan, 1972; Postuma & Carr, 1975) . Shared expectancy of outcomes is still another factor that facilitates student growth (Borghi, 1968; Boulware & Holmes, 1970; Goldstein, 1960; Heine & Trosman , 1960; Hoehn-Saric, Frank, Imber Nash, Stone & Battle, 1964).

The second type of compatibility, the optimal tension match, is found to be effective with variables such as values, beliefs, and certain personality measures (e.g., Minnesota Multiphaasic Personality Inventory, Myers-Briggs Type Indicator, and possibly the Gordon Personal Profile). Moderately dissimilar matches appear to achieve the best results in some cases (Bare, 1967; Berzins, 1977; Carson & Heine, 1962; Mendelsohn, 1966; Mendelsohn & Geller, 1967; Wogan, 1970) . The similarity aspect may be important in establishing the teacher-student rapport or therapeutic alliance. On the basis of the above studies, it seems that the dissimilarity may be important in eventually facilitating movement or change in the student's/client's belief system, values, attitudes, or knowledge.

A similarity of values between teachers and students appears to facilitate student learning (Bills, 1952). A study by Welkowitz, Cohen, and Ortmeyer indicated that there exists value similarity between counselors and clients and that a process of value convergence occurs over the course of successful psychotherapy. Cook (1966) found that a curvilinear relationship existed between counselor-client

value similarity and positive outcomes from brief counseling. That is, the moderately similar pairings resulted in more favorable outcomes than either the highly similar pairings or the highly dissimilar pairings.

Given the student's developmental readyness, Hunt's (1971) conception of an ideal match (on Conceptual Level or Moral Maturity) is a situation where the teacher is one stage above the student. If the teacher and student are on the same level he refers to this match as "super-optimal": a situation that prevents the student from progressing to the next higher level.

Reciprocal needs are the basis for the third variety of compatible trait matching. Foremost among these are: Schutz's (1958) FIRO theory of interpersonal compatibility, Leary's (1957) interpersonal circle, and Carson's (1969) extensions of Leary and of early Sullivanian theory.

Theories of reciprocal needs posit that needs of one member of a dyad are met (complemented) by the needs of the other member. Reciprocal needs are helpful for continued interaction. However, meeting each others needs to an extreme degree may result in inhibiting personal growth (Carson, 1969).

Schutz's need theory focuses on inclusion, control, and affection. What one individual desires, the compatible partner must supply, and vice versa. Research in psychotherapy supports reciprocal need matching for Schutz's "control need" area (Mendelsohn & Rankin, 1969; Sapolsky,

1955). Leary's primary dimensions are dominance-submission and love-hate, and there exist eight major subcategories and sixteen minor subcategories. Each minor subcategory of behaviors was presumed to evoke it's complement from the other person. Carson built on Leary's theory and discussed in further detail the various types of complementary and anticomplementary combinations.

Compatible trait models appear to have a high utility for training programs that are large enough to enable the matching of facilitators and participants on a systematic basis. Compatible trait models can be especially usefull to avoid psychonoxious (Berzins, 1977) or mathemathanic matches, or pairings that are ineffectual. (Mathemathanic means to impede learning; literally, to give death to learning; Snow, 1976). Attention to the dynamics and mutual influence between the trainer and participant with regard to their compatibility can only serve to heighten the awareness of both. They will probably become more cognizant of the impact that each has upon the other. They might better understand some of the reasons for the presence or absence of interpersonal attraction between them.

In human relations training we might be concerned with providing a similarity match between facilitators and participants. Especially in the case of female, minority, and third-world clients it is becoming increasingly clear from psychotherapy research (Ivey & Simek, in progress) that similarity of cultural experience is an important variable

in an effective helping relationship.

The optimal tension match might also be considered by the providers of training treatments. If no tension exists and the clients are confirmed and reinforced in their belief systems, then the catalytic environment for facilitating change is lacking. The other consideration in attempting to provide an optimal tension match is to avoid providing the client with too much confrontation. If the level of dis-confirmation reaches dysfunctional levels, then the client is no longer "accessible" or open to change.

Attempts to apply reciprocal needs matching in various settings are reviewed by Schutz (1958). He concludes that this type of match "show[s] the technique to have a certain degree of validity for composing productive, cohesive groups desirous of further mutual interaction... (Schutz, 1961, p. 275).

History of Matching Model Research

The reader may wish to pursue the research on matching models and ATIs in greater depth. Much of the matching literature (especially Hunt's work) draws from the original theories of Kurt Lewin (1935, 1936). Cronbach's (1957) article is the seminal work in the area of Aptitude-Treatment-Interactions. Pervin (1968) reviews studies treating performance and satisfaction as a function of the interaction between personological characteristics and the characteristics of the interpersonal and

noninterpersonal environment. Following that, the work of Vale and Vale (1969) discusses the study of organism-environment interactions. Mitchell (1969) addresses some of the methodological difficulties inherent in ATI research. Bracht (1970) further discusses experimental factors related to ATIs. The work of Salomon (1972) expands upon some of the models we have discussed in this chapter. Glaser (1972) explains that we need new aptitude constructs (e.g., cognitive styles) to explore the effects of ATIs.

Perhaps the best known advocate of matching learners to instructional treatments is David Hunt. In 1971 he wrote Matching Models in Education. Hunt and Sullivan (1974) elaborated on Hunt's earlier work. In a later paper, Hunt (1975) explains some of the reasons for resistance to the matching model paradigm. Berliner and Cahen (1973) review ATI findings in educational settings and discuss a variety of methodological and conceptual problems. DiVesta (1973) points out that most ATI research neglects to consider the intervening process, and instead focuses on input-output relationships.

The most recent comprehensive review of ATI research in educational settings can be found in Cronbach and Snow (1977). Berzin's (1977) article is a recent and exhaustive review of matching in psychotherapeutic settings.

Summary

One of the most promising methods of increasing participant outcomes from HRT is to employ a matching model approach. We can match participants to existing HRT programs or we can design training programs to match participants' characteristics/abilities. Attention to the interactional effects between the person and the training enables both the selection process (who gets the training) and the training design (what happens in the training) to be maximally effective.

This paper has discussed five major forms of matching. The capitalization, compatible trait, and compensation models seem to have the highest utility for the achievement of training objectives. The capitalization model, building on participant strengths, is the most suitable model for achieving HRT goals. HRT is often designed to encourage people to capitalize on their strong points. The compatible trait model would be particularly advantageous in avoiding bad matches between certain trainers and certain participants. Where training programs are large and diverse enough to enable large scale matching, the compatible trait models could be utilized to maximize outcomes by grouping certain types of participants and matching them with a trainer of similar or complementary traits. The compensation model would seem especially appropriate for lower order cognitive objectives, and some affective goals may be

achieved through compensatory instructional treatments. The remediation model is not usually applicable to human relations training settings. A preferential model is unlikely to be successful for individuals in the early phases of HRT.

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Typical Characterization of the Training Process

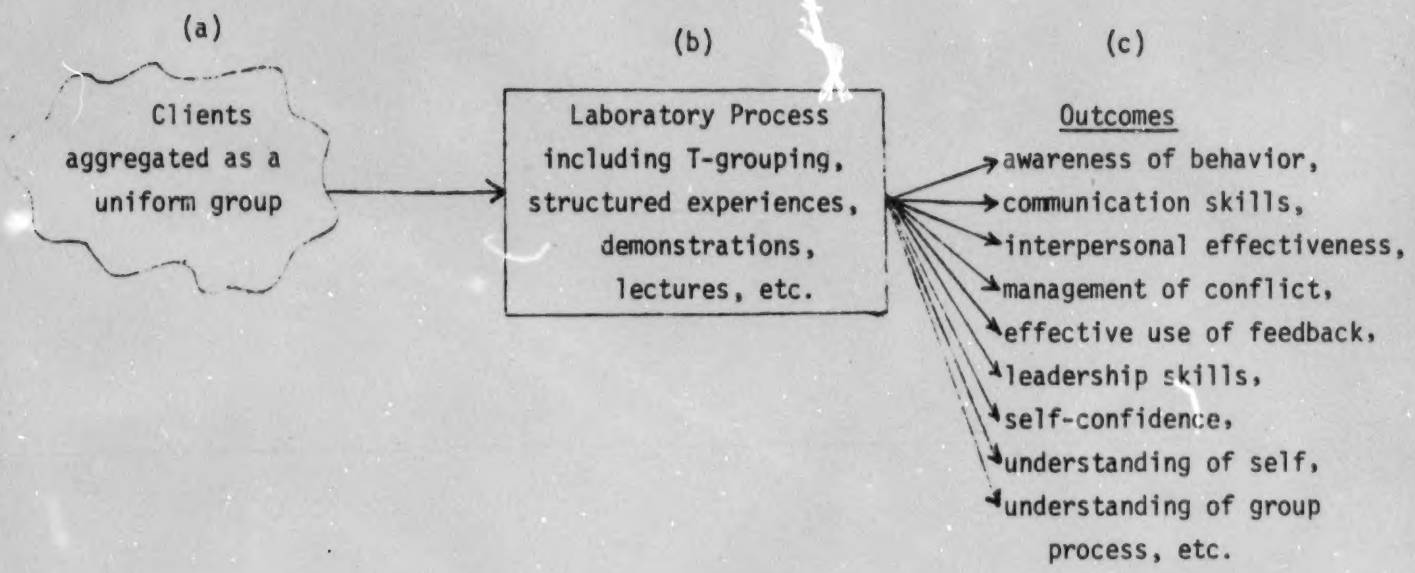

Figure 1

Goals of Education, Psychotherapy, and Human Relations Training

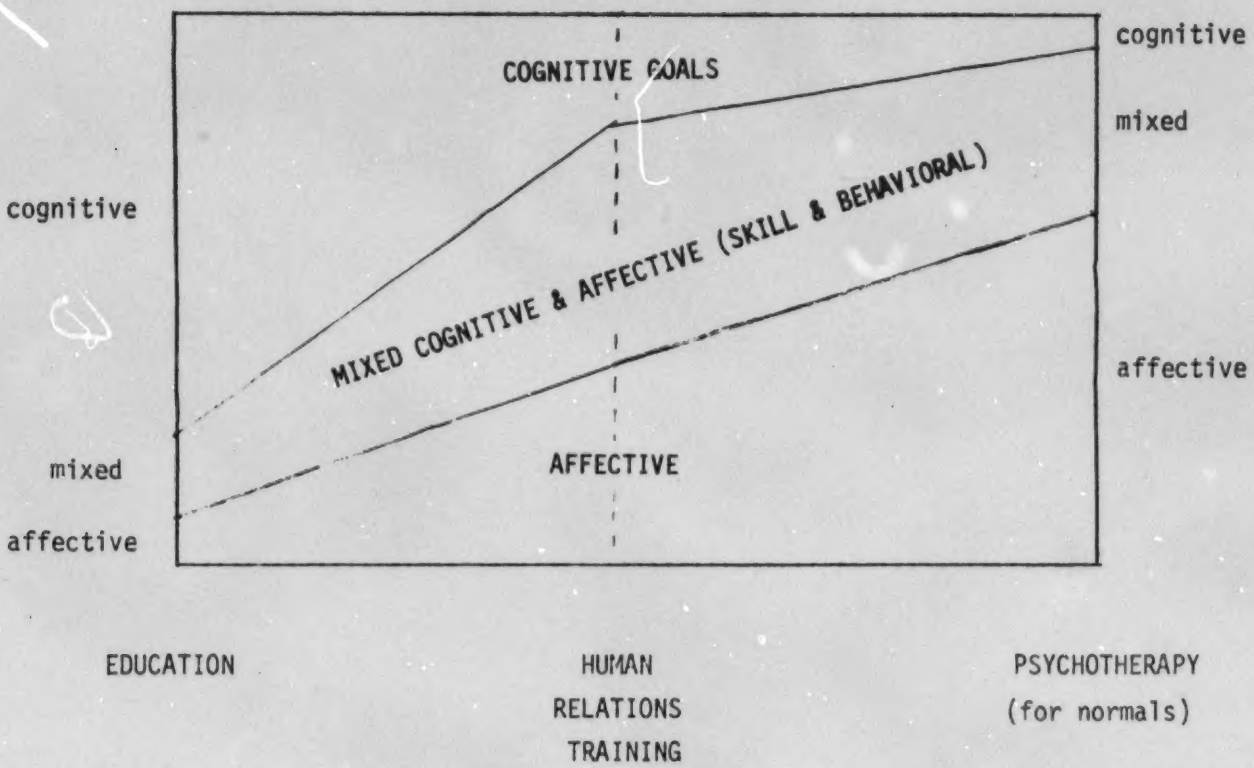

Figure 2